Digital Logic Circuits Lab
EXPERIMENT NO. 1
FAMILIARIZATION OF LABORATORY EQUIPMENT

Group Members (Last Name, First Name MI.)	Arcilla, Shanley Vanesca T. Bernal, Carl Samuel Lee Domingo, Joeheric D. Leynes, Thomas Andrei N. Romero, Jan Gabrielle Solano, John Andrie B.
Section/Schedule:	29033 (Wednesday, 10:30 am - 1:30 pm)

I. OBJECTIVES

Upon completion of this experiment students will be able to identify the uses and functions of the different laboratory equipment and devices used in the different experiments in Digital Logic Circuit.

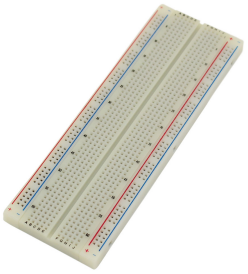
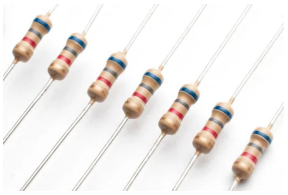
II. EQUIPMENT

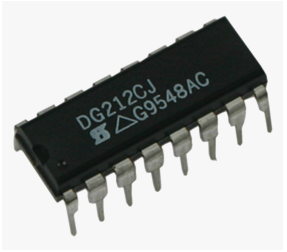
DC Power Supply	Light Emitting Diode (LED)
DC Voltmeter (VOM)	Alligator Clips
Solderless Breadboard	Connecting Wires
Logic Probe	Cutter
Resistors	Pliers
Integrated Circuits	

III. RESEARCH WORK

Make research work on the above-mentioned equipment. You must be able to draw/insert images and discuss their uses and functions. Give details on how to use this equipment. Make some preventive measures and techniques in handling this equipment.

Equipment	Image	Uses/Function	Precautionary Measures and Techniques
DC Power Supply		A direct current (DC) power supply supplies direct current (DC) voltage to a device under test, such as a circuit board or electronic product.	1. always connect a ground wire 2. do not touch the high voltages area. 3. turn off the power before touching the equipment. 4. pay attention to the electric charge in cables.
DC Voltmeter (VOM)		DC voltmeter is a measuring instrument, which is used to measure the DC voltage across any two points of an electric circuit.	1. You should know what range of voltage you are going to measure. 2. The voltmeter supply battery (mounted in the meter) should not be discharged either reading would be wrong. Check for battery low indication. 3. Wear properly insulated shoes so as to secure yourself. Your hands/ fingers, /arms should not be touched by the live wire/busbars.

Solderless Breadboard		A breadboard allows for the easy and quick creation of temporary electronic circuits or to carry out experiments with circuit design	1. If your circuit design is basic, choose a smaller size breadboard. Preferably, you may procure more than one such board so that you always have the option of locking them together in case you find your circuit is not accommodated by a single board. 2. You may nip off the component leads appropriately so that they do not fit clumsily 3. Always select the top extreme rail for the positive and the lower extreme for the negative or the ground connections. These rails will provide you with ample pin-out sockets creating wider connecting options with the supply terminals.
Logic Probe		Logic probes are used to analyze the logic states (high/true: logic 1 or low/false: logic 0) of digital signals. To verify and debug today's high-speed, low-voltage digital signals, you need logic probes that can accurately acquire signals from a wide variety of electronic designs, while protecting signal fidelity.	1. The protective grounding terminal of the measuring instrument must be connected to the ground. 2. Make sure to avoid an electric shock when connecting the probe to the object of measurement. Do not remove the probe from the measuring instrument after the object of measurement is connected. 3. Before connecting the input terminal of the probe to the object of measurement ensure that the measuring instrument is properly grounded and that the probe's output connector is attached to the input connector of the DL.
Resistors		A resistor is an electrical component that limits or regulates the flow of electrical current in an electronic circuit. Resistors can also be used to provide a specific voltage for an active device such as a transistor.	1. Before installing the resistor, in the lead wire to ensure the firmness of the soldering. 2. When storing and using resistors, ensure the integrity of the paint film on the surface of the resistors so as not to reduce their moisture resistance.

Integrated Circuits		An IC can function as an amplifier, oscillator, timer, counter, logic gate, computer memory, microcontroller, or microprocessor. An IC is the fundamental building block of all modern electronic devices.	1. don't remove the pre-set short-circuit line before welding 2. do not knife to scrape the gold-plated circuit pins 3. select a narrower tip that will not touch adjacent endpoints when welding.
Light Emitting Diode (LED)		Is a widely used standard source of light in electrical equipment. It has a wide range of applications ranging from your mobile phone to large advertising billboards. They mostly find applications in devices that show the time and display different types of data.	1. check with local regulations. 2. ensure that the light bar is firmly secured to your vehicle. 3. avoid touching the light bar 4. don't look directly at the light bar
Alligator Clips		Are a cheap easy way to assemble or alter experimental circuits. They are typically used to connect two wires or to connect one wire to the anode or cathode of a device. They are also useful in educational laboratory settings, often used with batteries, lightbulbs, and other devices.	1. ensure that all electrical items are disconnected 2. use wire strippers to remove the plastic insulation form the end of the wire. 3. use protective gloves
Connecting Wires		A wire is a flexible strand of metal, usually cylindrical. Wires are used for establishing electrical conductivity between two devices of an electrical circuit. They possess negligible resistance to the passage of current.	1. wear safety glasses and protective clothing 2. always test first 3. have the right tool on hand 4. avoid working in wet areas
Cutter		A cutting tool or cutter is typically a hardened metal tool that is used to cut, shape, and remove material from a workpiece by means of machining tools as well as abrasive tools by way of shear deformation.	1. keep your hands and body away from the cutting line 2. work on a solid and flat surface 3. restract the blade when not use
Pliers		Use to grip small objects, reach awkward places, hold wires, bend loops, and attach wires. Work involving smaller gauge wire.	1. never force it beyond its capacity 2. never expose it to excessive heat 3. never use pliers on live wires